VOLUME VI NO. 5

PORSCHE PANORAMA

MAY 1961

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PORSCHE PANORAMA

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T. KENDALL TWIGG.....EDITOR

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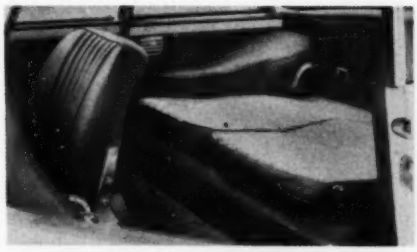
A Porsche 4-SEATER (by Beutler)

We received an interesting letter from our European correspondent Bing Ford. Bing who is a charter member of PCA was formerly active in the CENTRAL NEW YORK REGION. He is now in Geneva, Switzerland endeavoring to sell the Swiss on the pleasures of learning to dance the Arthur Murray Way.

Bing attended the Geneva Auto Show and sent us pictures and inforamtion on the special body four-seat Porsche made by the Beutler Carrosserie. Bing says, "The best thing about this car is that it still handles like a Porsche." Price delivered in Switzerland is $5,500 with 1600 Normal engine; $5,750 with 1600 Super engine; $6,000 with Super-90 engine. Weight 1951 lbs. Drive this one to your next regional meeting and watch the crowd gather!



It LOOKS like a 4-seater anyway!

These 2 views of the Beutler-Porsche show how the clean and simple lines of the original Porsche body have been retained. The wheel-base on this 4-seater is 92.5 in. Actually, the only original Porsche components on the car are the engine, transmission and running gear. Beautler designs and fabricates the entire chassis and body.

PYLON TWISTING

One of the outstanding features of the Porsche is its handling qualities. Yet, while we are always ready to boast about our car's abilities, few are willing to participate in events which demonstrate the superiority of the Porsche. I think the basic reason for this reluctance is because we are unfamiliar with our capabilities and our car. I further believe that this unfamiliarity can most easily be corrected by learning to dodge pylons on a parking lot on a Sunday afternoon. In other words, "Pylon Twisting".

Perhaps you have tried this and have given up in disgust saying it is too hard on the car. Nonsense! Nobody tears up a car except the driver.

Learning to wheel your Porsche around a pylon-filled lot will really help you to gain a better understanding of what handling is and what the car will do. Or, most important, what you can do with the car. Only practice will prepare you for greater challenges! However, you will have to learn to walk before you run. A gymkhana can be compared to crawling, an autocross to walking, and time trials and hill climbing to running. Then comes racing.

GYMKHANA AND AUTOCROSS

A gymkhana is usually a slow speed event of first and second gear. It involves parking problems, backing up, garaging, and gimmicks such as carrying a glass of water without spilling it.

An autocross, on the other hand, is a moderate speed event of mostly second and third gear. It usually involves a straight-forward motion all the way and is devoid of any gimmicks. Both are nothing more than driving contests similar to teen-age auto rodeos held by many high school driving classes.

TIME TRIALS

Time trials are strictly high speed events held on a closed circut which is sometimes a race course. These events are graduated in skill and act as excellent predecessors to hill climbing and racing. So much for the preliminaries.

KNOWING THE COURSE

There are two important rules to keep in mind: Know the course and Know your car. You must know the course or usually be disqualified when you leave it during an event. The second rule comes as a gradual education and may take some time.

Usually a diagram of the course is available. Before you copy it or go any further, make sure it is correct. Next, go out and walk the course a couple of times. If the course is permanently laid out, all pylons should be located by chalk marks. Commit the course to memory by making written copies. Also note the texture of the pavement. If it is smooth blacktop and a hot day, it will be slippery. Are there decambered surfaces, dips or loose gravel showing? What about the safety factors? Light posts and people

can also cause you trouble! Be aware of crowd control measures before you take off. Always let others take their turn around the course first. Watch them as they twist and turn. Anticipate their every move. Tell them (muttering to yourself) when to turn right or left and you will learn the course to better advantage. Take note of the line these other cars take. Where do they brake, shift, get set for a turn? Note their tactics and their mistakes and capitalize on them. View the action from different angles. This is very important.

ABOUT PYLONS

Analyze the pylons in groups separate from each other. Most courses are laid out with this idea. What is the relationship of these separate groups to each other? What is the best line through the first group to get set for the second group? Always anticipate what you are going to do before you do it.

The serpentine or slalom is always a favorite of those laying out a course. It is especially difficult when the distance between pylons changes abruptly. It is usually best to start out by approaching the slalom so you are turning as soon as possible at the first pylon. Be careful not to speed up and go in deep. When this happens, you run out of steering. You are at full lock with a pylon staring you in the face!

If the pylons are evenly spaced you can set a rhythm. Stay in close and make your turns shallow. It might be a good idea to have someone whatch your wheels to see how close you come to the pylons.

If the slalom is uneven in that it tightens up somewhere along the line, be prepared to go WIDE before you get to the tight area. It is best not to use your brakes when driving the slalom. With so much wheel twisting you will only defeat your purpose and lose your line. It is important NOT to brake and turn at the same time. It is a very common error and results in the car going in a direction that is not intended. Result: crushed pylons. Big turns, the 180, 240 and 360 degrees, are a delight to watch and perform. Most of them are pretty tight and it is here when even the bona fide sports cars take on a decided lean. But not the Porsche! It corners flat as a pancake. It is in these turns that we see potential winners spin their wheels. It is the forward motion that counts, so try not to spin the rear wheels or let the front wheels lose their grip. Every time the wheels lose their grip, the car loses forward motion. Squeeling and smoking rubber makes a good show, but it doesn't get you a win!

Donald L. Petersen, D.C.
Potomac Region

Ed note: Don Petersen has won more than twenty trophys during three years of participating in rallies, gymkhanas, autocrosses, time trials and hill climbs. His wife has won another ten! The next step is racing and he is now rebuilding a 58 N Speedster for regional competition. His article "Pylon Twisting" will be continued next month when he writes about Preparing the Car, Tires and Pressures, Technique and recommended Do's and Don'ts of this exciting sport.

72 H.P. NORMAL

Dick Keys cracking the whip in his 72 H.P. Normal Coupe. He lays claim to having the highest horsepower for any normal, although he admits it slows him down a bit to use the extra boost. Dick is a former president of Potomac Region and is now serving as Secretary of the Los Angeles Group. Here in Potomac we consider the loss of Dick to Los Angeles as one of our unhappiest moments.

OPEN END (WRENCH)

Every article and publication concerning the tuning of the Porsche engine stresses the need for checking the quantity of fuel delivered by the accelerator pump . . . With What? . . . A readily available calibrated tube with graduations 0.3cc, 0.5cc, or 0.6cc can be obtained from anyone who administers their children vitamin drops. The droppers are usually made of plastic and simply require the closing of the end and affixing a wire bail to facilitate their use in measuring the pump volume.

Don Kinney,
Potomac Region

LET'S PLAY IT SAFE! FASTEN

In the first part of this article, we learned that a passenger in an auto crash may be subjected to forces of 2 tons or more, and that a SAFE Seat Belt must be strong enough to absorb this amount of force . . . without breaking.

DEVELOPMENT OF SEAT BELT STANDARDS

Automotive crash and safety research is a comparatively recent activity, although the use of Belts or other restraining devices as a Safety measure is certainly not new. I imagine that some of Rome's hotter chariot pilotos must have dreamed up various and sundry restraining rigs so that they might have the edge in a tight 180° turn in a Saturday afternoon GO at the Coliseum.

Early balloonists used holding straps of a sort and with the development of the "flying-machine" the Seat Belt became a standard item of equipment. Stunt-flyers and drivers used Safety Belts as a matter of course and the U. S. Army Air Force, later the U. S. Air Force, developed special Belts and safety Harness to meet their own particular requirements.

The first standard or specification, so far as we can learn, for Seat Belts for use in commercial aircraft was developed by the Civil Aeronautics Agency. This specification was called CAA-TSO-C-22. It has since been modified and superseded, the latest change having been made in 1960 and bears the suffix -22D. Seat Belts for use in commercial aircraft *only* are covered by this spec . . . not automotive seat belts.

STANDARDS FOR AUTOMOTIVE SEAT BELTS

It is only in the past decade that the need for Seat Belts in passenger cars has become recognized. The first realistic standard was written in 1958 by the General Services Administration (GSA) the Supply and Standardization Agency of the U. S. Government. This was called Int. Fed. Spec. JJ-B-00185(GSA-FSS). It was superseded in 1960 by the present specification, JJ-B-185a.

It should be noted that this is a specification written for use by government agencies *only* who purchase Seat Belts for use in government automotive equipment. Seat Belt manufacturers who wish to sell Seat Belts to the government must furnish belts which meet the requirements of this specification. Belts which a maker may sell *to the public* need not necessarily meet the GSA specifications . . . and this is important to remember.

Another authoritative Standard for Automotive Seat Belts has been written by the Society of Automotive Engineers (SAE). Both the GSA and SAE specs spell-out in considerable detail exactly how the Seat Belts must conform to their standards. The type and kind of webbing is described, the acceptable types of buckles are listed, the requirements for reinforcing plates and hardware and the methods for testing are included.

One of the more interesting differences in the CAA, SAE and GSA specifications appears in their standards for "Loop Strength". This is the strength applicable to the entire Seat Belt assembly of webbing, buckle and all attaching hardware. CAA requires a Loop Strength of 3,000 lbs., SAE a Loop Strength of 4,000 lbs. and the GSA spec spells out their requirement thus, "3.4.3 Loop strength, (each occupant) belt assembly. When tested as specified in 4.4.4, the assembled belt shall withstand a minimum loop load of not less than 5,000 pounds applied for 3 seconds. The release mechanism of the buckle shall be operable after this test."

While it might be assumed that the GSA spec would thus call for a stronger belt assembly, this is not necessarily the case. The TEST requirements or methods as set forth by the three specifications are not the same. A belt assembly that successfully qualifies under the 4,000 pound Loop Strength test of the SAE spec might very well also pass the 5,000 pound test under the GSA spec. Nevertheless, the GSA Specification JJ-B-185a has come to be generally accepted as THE standard for automotive Seat Belts.

Porsche drivers who hold SCCA competition licenses will know that SCCA requirements call for the use of a Seat Belt in competition which shall conform to the GSA specification JJ-B-185a and further specify that the buckle shall be of the metal-to-metal type. The pertinent GSA paragraph reads, "3.3.4.1 Buckles.—The buckle shall be a metal to metal type with a positive latch or a metal to webbing type designed to lock by friction at any desired place on the webbing".

The latter type of buckle relies on spring pressure to tension a serrated metal cam against the webbing. Positive "locking" however, requires manual sqeezing of the latch by the passenger. Aviation Crash Injury Research, La-Guardia Airport, N. Y. found evidence of slipping and inadvertent releasing in this type of buckle mechanism due to "inertia loading" particularly when the belt is loosely adjusted. We agree with SCCA that the metal to metal type buckle appears to be more reliable than the metal to webbing type.

N YOUR SEAT BELTS!

Another interesting aspect of the GSA specification concerns the webbing to be used, "3.3.2 Webbing.—Webbing used in the belts shall be of woven nylon, 'Dacron', nylon and 'Dacron', or nylon and rayon, and 1-11/16 to 2-5/16 inches wide under no load." We have often questioned the superiority of a 3 inch belt over a 2 inch wide belt and since GSA specifies a *maximum* width of only 2-11/16 inches this is good enough for us. And, in checking further we found additional support for our contention in the report on a series of tests conducted at the Aeromedical Laboratory, Air Force Missile Development Center, Holloman AFB, New Mexico from which we quote, "The lap belt was tested in both 2 and 3 inch widths. Aside from the extra strength for a given flexibility, there is no test evidence to support the 3 inch width as superior to the 2 inch width."

SOME FACTS ABOUT CRASHES

The standards and specifications developed for Seat Belt requirements have been based primarily on the results of crash research conducted by several organizations. The Automotive Crash Injury Research of Cornell University, in the past six years has "researched" 20,000 crashes in cooperation with the police and doctors of 22 safety-minded states. 714 of these crashes involved Seat Belt owners. Here are some answers to often asked questions.

IS IT TRUE THAT YOU ARE SAFER WITH SEAT BELTS?

Yes you are! The Cornell study shows that you are 60 percent less likely to have an injury of any sort. Being thrown from the car is the big killer and you are 50 percent less likely to be thrown out and be killed if you wear a seat belt.

SUPPOSE THE CAR CATCHES FIRE. CAN I GET OUT IN TIME?

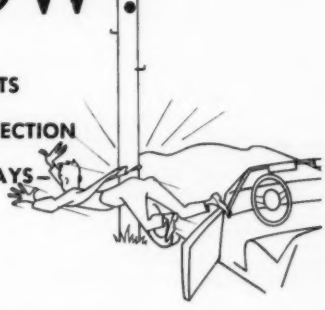
Cornell finds that only 2 cars in every 1,000 burn after accidents. But even if yours should, tests by Connecticut State Police show it only takes one second longer to get out of a car when wearing a seat belt.

WHAT ABOUT ACCIDENTS AT MODERATE SPEED?

More than 50 percent of the accidents causing injury or death involve speeds of less than 40 mph. You should wear your seat belt whenever your car is moving. Three out of four traffic

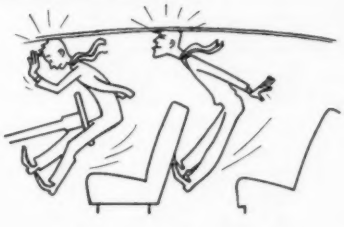
HOW?

SEAT BELTS FURNISH PROTECTION SEVERAL WAYS—



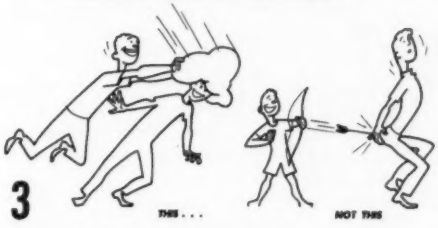
1

—PREVENTING EJECTION



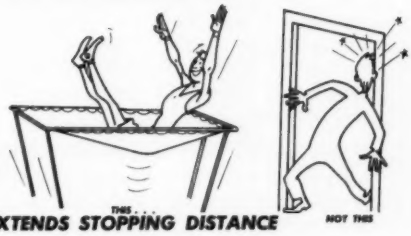
2

—LESSEN INJURY FROM INSIDE



3

—SPREADS IMPACT FORCE



4

—EXTENDS STOPPING DISTANCE

5

—BELT ABSORBS PART OF FORCE

deaths occur within 25 miles of home. FASTEN YOUR SEAT BELT even though you're just driving around the corner to the grocery.

WILL I BE UNCOMFORTABLE IN A SEAT BELT?

Tests show that Seat Belts prevent fatigue and reduce the muscular activity needed to maintain equilibrium. They prevent back-aches by keeping you comfortably in the proper seating posture.

We are reprinting below the SUMMARY of a joint study made by the Automotive Crash Injury Research of Cornell University and the California Highway Patrol. We think it's convincing.

SUMMARY

The California legislature required, in a 1957 statute, compilation of the opinions of state highway patrolmen investigating rural highway accidents as to the effect of available and used safety belts in controlling death or injury in 1958 accidents. The California Highway Patrol entered into a cooperative agreement with Automotive Crash Injury Research of Cornell University whereby the California group would collect the necessary data and the Cornell group would compile, analyze and report the findings. Summarized below are the results of a comparison of injury frequencies and severities among 933 driver and right front seat passenger automobile occupants who used belts, and 8,784 driver and right front seat occupants who did not use belts.

1. The risk of death and injury in automobile accidents is markedly influenced by such accident-injury factors as (a) speeds of cars involved, (b) accident type, and (c) seat occupied. Successful evaluation of safety belt performance depends on accounting for the influence of these variables.

2. With due regard for the influence of specified accident factors, it was observed that users of safety belts sustained approximately 35 per cent less "major-fatal" grade injuries than did non-users. This reduction in injury was found to be statistically significant and not due to chance fluctuations.

3. Safety belts appear to function as a protective device chiefly in rollover accidents or non-specific (side, angle or "unusual") accidents.

4. It was observed that users of safety belts sustained fewer fatal injuries than did non-users, but the small amount of available data precluded statistical confirmation of this indication.

5. The safety belt is not a panacea in that it does not provide complete control of all grades of injury occurring in accidents; for the seated positions examined, it reduced "major-fatal" grades of injury to "minor" ones.

6. The reduction in the frequency of "major-fatal" injuries among belt users is related largely to the performance of safety belts in preventing occupants from being thrown out of automobiles under crash conditions.

Leading organizations concerned with Safety and Health recommend that you have seat belts installed in your car and that you use them. These incude, the American Society of Safety Engineers, American Medical Association, Automotive Safety Foundation, American College of Surgeons, National Safety Council, and the U.S. Public Health Service.

There MAY be one or two Porsche drivers who have not yet installed Seat Belts. Here's a little check list for purchasing a Seat Belt.

1. Be suspicious of "Surplus" Type Air Force Seat Belts. These are usually priced quite low. However, they may have been lying around on the retailer's shelf for years and in an Air Force depot for many more. They may be good and they may not. Don't put a price tag on SAFETY. A good new Seat Belt will cost from $10 to $16. Buy a NEW one.

2. Most Seat Belts offered today are good belts and conform to safe standards. Check the belt to see if it is LABELLED! A good belt should carry a LABEL which states that it meets or exceeds SAE or GSA specifications.

3. Be sure the webbing is 2 inches wide and that the buckle is the metal-to-metal type.

4. Buy a belt that includes all hardware and fixtures and installation instructions.

5. Install the belt according to the instructions furnished and FASTEN YOUR SEAT BELT when you turn on the ignition.

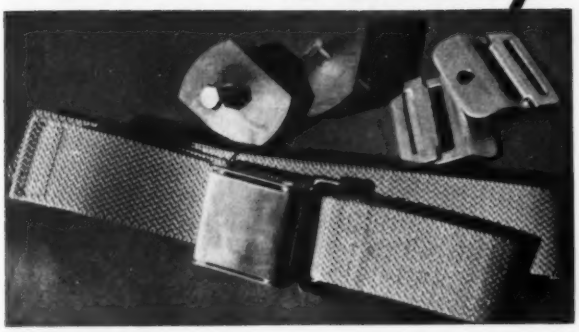
PCA has just added to the Film Library a new film "Safety Through Seat Belts" produced by the University of California in cooperation with the U.S. Dept. of Health, Education and Welfare. Its a terrific film and shows what actually happens in automobile crashes. Have your region program chairman schedule this film for your meeting.

We are grateful to the following organizations for furnishing the information for this article and permission to reprint it: the U.S. Public Health Service, Division of Accident Prevention; the Automotive Crash Injury Research of Cornell University; the Dept. of Visual Communication, University of California; the General Services Administration; the Traffic Safety and Highway Improvement Dept., the Ford Motor Company.

Wm. J. Sholar
Potomac Region

THE LIFE YOU SAVE MAY BE YOUR OWN

INSTALL Safety Belts NOW!



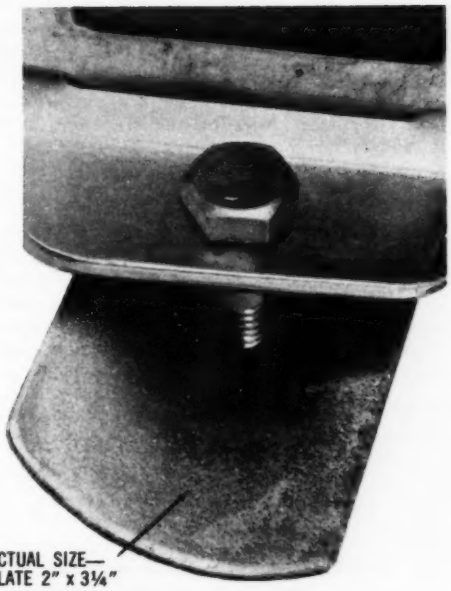
"35% LESS FATAL INJURIES OR DEATHS IN AUTO CRASHES WHEN USING SAFETY SEAT BELTS"

A Mistake by another driver may result in an Accident and Injury to YOU. Get MAXIMUM protection against this contingency, INSTALL and USE Seat Belts.

- **The BUCKLE is metal-to-metal and quick-release. Meets SCCA requirements.**
- **The Lift Lid on buckle is completely retracted between side walls to prevent accidental tripping or dynamic (inertia) release in a crash.**
- **Webbing is 100% NYLON, 2 inches wide, pebble grain and shock-absorbing.**
- **Belt exceeds Federal Government Specifications written by G.S.A. and U.S. ARMED SERVICES.**
- **Belts test to over 6,000 pounds. Both PULL and DROP tests are used on the Belts.**
- **Reinforcing plate and hardware furnished with the Belt. The reinforcing plate is .108" thick, measures 2"x3¼" and is dome-shaped to give nearly double resistance to bending.**
- **The Tie-down Bolt is ⅜ inches in diameter.**

Choose your belt from a wide selection of beautiful blending colors. Available are: Maroon, Navy Blue, Gray, Green or Black.

Seat Belt Complete, with all hardware, attachments and instructions for installing. **$11.85**



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NEWS FROM THE REGIONS

MONTEREY BAY, PCA's fortieth region, installed officers April 9, 1961; Major John Pepperdene—President, Jack Satterfield—Vice President, C. D. Baer, Jr.—Secretary, G. A. Van Fleet—Treasurer and Bill Maison—Activities Chairman.

The region closed out Charter Memberships March 6, 1961 with 21 members, however, an enthusiastic recruiting program is underway. Porsches placed 1st, 2nd, 4th and 2nd overall in major and minor events at Stockton in mid-April. In the roughest class, "Porsches vs Corvettes", at three times the displacement, Don Wester put on an exciting exhibition as he moved from 26th to 6th place in class. John Pepperdene and Dave Knight took the Salinas Sports Car Club Rally in April and Ed Luker brought home 2nd place from the Sacramento Concours. MONTEREY BAY have an an interesting custom forming. The members meet in the heart of Monterey and then tour to the places selected for the monthly meeting — Soquel in April and Carmel Valley in May.

DELAWARE REGION'S May event was Schnook's Tour led by Dick Akers — a delightful drive through rolling countryside to a colorful restaurant, one of the Akers' favorites, for a truly fine Sunday dinner. Dick provided humurous instructions showing the route and points of interest.

CONNECTICUT VALLEY will run an overnight rally the weekend of May 20th limited to just 20 cars. It starts in Highland Orchards, just over the Connecticut line, and ends up at Bass River, Cape Cod. This is CONNECTICUT VALLEY'S most popular event of the year.

JERSEY SHORE celebrated its first birthday May 13 with a beer bust at Atlantic Highlands Hideaway.

The region's Spring Fun Rally was a huge success —receiving good press coverage. All speedometers and tachs were masked and no computers or calculators were allowed. First place Porsche and second overall was taken by the R. Weir/J. Ritchie duo while 2nd place Porsche, 4th overall, went to N. Blakeslee and J. MacKay.

Participants received hand made ceramic trophies donated by rally master Bob Jacquot. Prize for last place Porsche, driver and navigator not named, was a can of anti-freeze. It will come as some sort of news to many resions that one of the local service agencies, Jenewein Motor Cars, in JERSEY SHORE is getting overstocked with German Porsche mechanics and plaintively pleads for customers. ***Carrol LeFon***

The first five places in NORTHEAST 1960 annual competition were won by Roger Bond, Charles Dow, Joe Wenckus, Ernie Groves and Bert Borngesser.

The May event of NORTHEAST was a run to Mystic, Connecticut where the members toured the old seaport, a folk museum of the age of sail and an authentic replica of the mid-19th century. Leaving their Porsches to rest, the hearties walked the decks of sailing ships and visited other nostalgic reminders of the past, old apothecary and clock shops, ship chandlers and old dock yards. Many a NORTHEAST salt visualized himself in the bow of a whale boat with harpoon ready and the salt spray in his face or, perhaps as Captain Bly or Fletcher Christian. Roy Leon and Seymor Lisker were sailing masters.

Bob Schoening of NORD STERN sent in some really advance news. The region will hold a picnic on the Apple River in Wisconsin after the Parade.

On September 16 and 17 a two day rally will start from Cannon Falls, Minnesota. The overnight stop will be in Eau Claire, Wisconsin and the finish near Hastings. Invitations are extended to other regions to attend a strictly business rally, accurately timed and measured but also permitting visits to interesting places along the route, by day and by night, where everyone can have *FUN*.

MILWAUKEE members are planning to caravan to Jug End Barn for the Parade. This is a very interesting way to go places, especially for the people in the tail end car. It doesn't conform to physical laws, but while the lead car is averaging 50mph the last car is going 70, all the way. Bob Claypool and Lars Larsen placed first in Jerry Tannenbaum's Hog's Back Rally in March. MILWAUKEE wishes prominent notice given to the fact that the region will erect and staff a PCA tent at Elkhart Lake Road America, June 17 and 18. All PCA members are urged to visit the tent, sign the guest register and meet members from other regions as well as MILWAUKEE.

POTOMAC'S Ken Leith accumulated eight more points toward SCCA National Class championship in the Governor's Cup Races at Marlboro. Ken's car, a tired old normal coupe, is used for everyday commuting. Speedsters, hot MGA's and D-B's offer Ken little threat who uses skill. Ken may move to something newer and lighter soon.

Tad and Nic Niccolls were co-designers of POTOMAC's April Unique Antique Rally, so called because among other things it had a mid-point stop at a vintage car museum. Described by the authors as a Wagnerian tragedy, 186 miles of it, two of twelve cars entered finished. Nic is famous for his very difficult but technically perfect rallies and all who enter do so with full knowledge. First place was taken by Gordon Wagner and Ray Stattel who zeroed three check points! Tom and Peggy Lusk finished second. Remaining positions were awarded according to the amount of the rally properly accomplished. Seventh place was awarded to the car which managed to make it to the mid-point, although two hours late, and one check point in the afternoon backwards.

The Niccolls are moving soon to California where this kind of event sorts well with climate and the people. POTOMAC loves the Niccolls and will miss them. Gordon Wagner promises to continue in Nic's tradition—and to tell the truth the region has become rather fond of Nic's nightmares.

The enthusiasm of GOLDEN GATE members is wonderful. There were seventeen active candidates for regional office in the May elections. Fifteen GOLDEN GATE lead-foots appeared at the Santa Clara County Fairgrounds to accept Karl Keller's autocross challenge on April 9. The three-way competition involved the Northern California Corvette Association, the Continentals and GOLDEN GATE. Cars competed in six classes—according to color! Blue against blue, black against black, white against white and so on.

Ed Hampton had the best time of the day and run in white class, Pete Landgraf was best in red class and Emil Pardee best in silver and grey. Even so Corvette Club took overall. In California there are no black or brown Porsches, it appears, and, therefore, no Porsche competition in those classes. Strange to relate Karl Keller, president of the Corvette Club and running for Corvette, won 1st place in blue class in a Porsche!

Not so very long ago POTOMAC ran what was described as the World's Shortest Rally. It had a twenty mile odo leg and seven miles of rally course. Well, PENN-OHIO tops this with the President's Rally in April. 600 yards long from start to finish—a bowling alley. Completion of the event required some unorthodox doings with bowling balls and ten pins during which the rally master, possibly through error, was nearly bowled over several times. The teams of Austin and Ann Davis and DeVaum Kessler and Helen Keel tied for 1st place. Al and Ginny Roncska placed 2nd while Roger Meir and Cheryl Davis took 3rd. "Tink" Walsh won, if that is the proper word, last place.

Erna Blatt of ARIZONA won the ladies race in her Super 90 at Deer Valley April 9. Husband Bill had a fine time in their new Lotus Formula Junior. A real male-female reversal appears in the answer that Erna made to the question, "Do you think women should race?"

Her reply, "Yes, if the women enjoy driving, and have the encouragement of their husbands." Erna and Bill were married some eighteen years ago and have five children, a son and four daughters, ranging in age from six to seventeen, which makes her about twenty-nine years old.

When Erna isn't racing and raising children she is a girl scout executive. In her spare time she does needle point.

It was ladies month in ARIZONA. June Dean entertained the ladies at home one fine day with bridge, chit chat and games for the children. The men, taking advantage of the situation, threw a stag party and now the girls want to know what happened. The boys aren't talking.

PARADE BULLETIN

You will soon be on your way to attend the Sixth Annual Porsche Parade. We hope it will be the greatest yet! Ted Smith, Tech Chairman, has given us a last minute rundown on what to expect in the way of service, lectures, etc.

A driver's evaluation test will be conducted by Anthony DeSisto, special supervisor for the Massachusetts Registry of Motor Vehicles. You will be scored on your driving ability and reaction time.

Herbert Dramm and Friends from the factory will present interesting lectures on Friday morning. After lunch these experts will conduct special discussion sessions and you may listen to the topic of your choice.

The factory team will road test your car according to the order of receipt of the questionnaire that you should have by now received, filled out and returned.

Good Porsche service will be supplied by Foreign Motors of Boston, Hoffman Motor Car Co. of New York and Henry Carroll Co. of Vestal, New York. You may plan your maintenance with these prices in mind:

1000 mile lubrication	$2.00 plus mat.
Castrol per quart	.60
Quaker State per quart	.55
Quaker State Gear Oil per lb.	.45
Tune up and other labor	6.00 per hour

Gasoline may be obtained from the local stations about three miles from Jug End Barn. Facilities will be available at the ball park for washing and polishing your car.
Have fun and a pleasant trip!

IS YOUR COLOR SAFE?

My story starts with a 42 year-old Swedish bank employee from Stockholm. His name is Per-Goesta Hoegborg and he has owned a 1600 Porsche for a year now. He has developed a quite remarkable hobby: these Porsche drivers always greet one another by blinking their lights, and thereby one feels one has some contact with one another, but actually one seldom knows who it is, he explains, and wouldn't it be quite entertaining to learn more on this subject. What sort of people drive a Porsche? During the past months he has painstakingly recorded nearly all the Porsches running in Stockholm, over 200 cars, and has made private inquiries among the Porsche drivers.

In the meantime he has established the fact that in greater Stockholm 17% of the Porsche owners are engineers, 9% architects and 8% doctors—these three professions have the highest percentages. Further: 7% of the Porsche owners are directors of industrial firms, 6% belong to the military (a figure which surprised us), 5% are salesmen and a further 5% students (this student percentage is probably also so high only in Sweden).

Per-Goesta Hoegberg, who incidentally drove to Rome for the Olympic Games during his summer vacation, then wanted to know what colors were preferred in Sweden. The Stockholm Porsche drivers also uncomplainingly complied with this registration. The red shares (21% of all Stockholm Porsches) were the most strongly represented, close behind them came blue with 20%, third came silvermetal with 17%. 14% of the cars were painted white or cream, green also 14%. Gray, black and yellow did not play so big a part. This color quiz gave me the idea not only to learn the Stockholm figures, but, for once, to find out exactly which colors are preferred by Porsche drivers all over the world today. The Reutter coachwork company was glad to supply the information, and here are the statistics for the first half-year 1960:

Period:
first 6 mo. 1960

Color:	No. of bodies:
Silver-metal	639—21.3%
Ivory	585—19.5%
Ruby Red	408—13.6%
Heron gray	309—10.0%
Etna blue	257— 8.6%
Slate gray	188— 6.3%
Signal red	143— 5.0%
Black	120— 4.0%
Royal blue	115— 3.8%
Condor yellow	90— 3.0%
Fjord green	82— 2.7%
White	8
Auratium green	5 — 1.3%
Other (special)	26

Are you surprised? When, as did our friend from Stockholm, we put the various colors together in color groups, we get the following picture: in the lead in silver-metal with 21.3%, right after comes the white/ivory group with 20.4%, then the reds with 18.6% and the grays with 16.3%, fewer blues with altogether 12.7%, black as only 4%, yellow 3% and green 2.9%. I was very surprised. For the reason that very many Porsche drivers answer the question as regards color with "Which color pleases both my wife and myself?" I already see how, almost indignantly, you round on me with: "Well, and how shall one then choose the color of one's car?"—That I can tell you exactly: one can also choose a color having regard to the question: "Which color is safe?" Yes, there are safer colors, or, to be more precise, there are colors which are more safe than others. A safe color is one which at dawn, at twilight, on rainwet asphalt, in fog, stands out against its surroundings, from the surface of the road and from its edges. A safe color is one which is clearly visible. A safe color is one which attracts attention. You know it yourself: many accidents are caused while an oncoming car simply doesn't see the other one, or sees it much too late, when light conditions are bad, as they so often are in fall, winter and spring. The gray car on a gray road, the black one on a black road, rain-wet asphalt, the silver-metal effect in fog and in the light of the setting sun—you know: with a car which approaches another one very fast, one should pay especial attention to color. Incidentally, with "easter egg colors" you can be much better seen in someone's rear-view mirror, when you want to overtake. In the Porsche color program there are four colors which, for these reasons of safety, I would not choose for my car —the editor is surely allowed to be quite honest? And these are silver-metal, heron gray, slate gray and black (I know that both the silver-metal and the other gray shades are in fashion today, but I'm sticking to my guns . . .) On the other hand, there are four colors which I consider to be extremely safe, and those are: ivory, signal red, condor yellow and white.

Let us look at our production figures for the first six months of 1960: only 28.4% of the cars are painted with my "safe" colors, against which 41.6% are in colors which I admit are very chic, but which in borderline cases of bad lighting cannot be seen so well. Perhaps I have a safety tic, I'll accept this reproach, but recently my

opinion was further strengthened:

I was being comfortably flown over Kassel and the surrounding villages in a little Piper because I was doing an article for the "Stern" (illustrated weekly) on traffic problems, and one very often gets a much better all-round view from the air. From a height of 600-900 ft. I looked with curiosity down upon the cars, looking like toys, which were moving up and down the roads and the autobahn near Kassel. The bright yellow and red cars were much easier to pick up, they stood out clearly from the road, whereas the gray, dark blue and anthracite cars only became recognizable when one took a very good look indeed. For the most part one could also identify the make of the light, strong-colored cars, the other —never.

I don't want to make you afraid, when you own a car which can't immediately be seen from 900 ft. up. My point is that when buying a new Porsche, other than finding it pretty, the safety factor should also play a subconscious part in the choice of a color.

Richard von Frankenberg
reprinted from CHRISTOPHORUS

PORSCHE PAEANS

The Panorama is my favorite U.S. magazine but it sure is full of moanings of assorted experts in issue after issue about poor brakes, poor servicing, poor this and poor that. I would like to rebuke these gentlemen and make a few observations of my own. Although I'm certainly no expert, I claim driving experience with four Porsches — on three of which I've put plenty of mileage. This fact coupled with a normal power of observation gives me the basis for taking issue with the critics.

First of all, the brakes: The wailings and groanings of so many PCA'ers leave me cold! I have not yet been able to find fault with the brakes on any Porsche I've owned — from Speedsters, Hardtops, Cabriolets to Roadsters with power plants from 1600 "Damen" to Super-90's. On long distance tours through the mountains, where I've had to do a real lot of braking, I've never found them to fade or in any other way fail me. And in only one car — my 1600 Super Cabriolet — did I slightly detect the so-much-written-about 'Squeak'.

Secondly, the performance: In the December 1960 issue one PCA'er complained of only achieving 18 seconds at the local drag strip in his Super 90. Well, I in my non-modified nor tampered with Super-90 Roadster have again and again gotten 13 to 14 seconds (corrected) from 0 to 60 MPH and I not only weigh 194 pounds, but also have the weight factors of an electric dash clock and a radio working against me.

Krulle and his Hardtop with Golde Sunroof!

Thirdly, reliability: I have to date never encountered the carburetor troubles, the poor idle, burned spark plugs or other annoyances that some PCA'ers are always yammering about. I have enjoyed trouble-free Porschmanship year after year. Then again, is this because as an admitted non-expert, I let the Porsche Service Department do my carburetor adjusting, rather than dismantle the jugs myself, looking for imagined troubles or indulging in unqualified experimenting?

This brings me to another set of PCA'er diatribes, namely about Porsche Service: Although I refrain from too much of my own tinkering, except perhaps a rarely needed idling adjustment, I very often have checked up on the Porsche Service Department work and have to date been well satisfied with all work done by them on the engine and car in general, noting that oil was actually changed, grease actually dispensed, requested adjustments actually made, etc. So far Porsche Service in Florida, New York, Pennsylvania and Illinois has my unreserved praise. Too bad some of the German mechanics in Florida have been underpaid, which is causing them to move away to seek higher wages out West.

And all this cackling against VDO speedo and tach: VDO gauges and dials are quality instruments and used by the expensive Mercedes Benz cars because of this quality. Strict regulations in Germany have forced the VDO manufacturers to introduce the rather optimistic readings in the speedometer for fear of allowing their instruments to illegally under-read. But these high readings can be very easily corrected by the VDO people in Detroit.

And regarding safety: Last year my Cabriolet skidded off the road at high speed. My wife was in the car with me. We somersaulted down the embankment and crash landed upside down on the so vulnerable appearing soft top. Yet both my wife and I crawled out from the inverted wreck without a scratch. Of course luck did play a part, but the lion's share of credit for the protection afforded us goes to the rigid body design.

I am happy to report that I have encountered virtually no criticism about gas consumption from PCA folk. I have kept accurate records of my numerous long hauls as for instance over 1000 mile runs from Florida to Chicago, or New York to New Orleans, or New York back to Florida and was very pleased with honest averages of good 37 M.P.G. highway driving with my 1600 Normal. Of course similar trips with the Super-90 have given me averages of only around 25 M.P.G. which still isn't bad for this type of competition engine.

I believe that by the sheer law of averages I just can't be getting all the good and faultless Porsches while other PCA'ers are getting all the lemons! Perhaps there is too much unskilled owner maintenance going on. All of mine, including a speedster in Germany which was second hand, have given me trouble-free driving, have had excellent brakes, faultless workmanship and very good performance. Please forgive me for my above rebukes, for I am writing this in the spirit of exchange information and would welcome retorts from other readers. I might also mention that my door is always open to PCA'ers at my Florida home and anybody is welcome to 'Porsch-talk' with me over good German beer, which is always in my refrigerator next to my wife's vodka.

Lest I be accused of being prejudiced or too lyrical about the Porsche products or a secret agent for the Zuffenhausen crowd, I hasten to say two things: First of all, a relative of mine is one of the hierarchy at Daimler Benz at Stuttgart and is little pleased with my enthusiasm for the product of a competitive auto firm; and second of all: despite all the enthusiasm for all the above-mentioned virtues of the Porsche cars, I condemn with equal vigor these three features: One, the lack of ventilation ducts so necessary for warm climate driving in the rain. When I lived in North Germany I had no complaints whatsoever in regard to inside car temperatures and found long distance trips with the top up and windows closed as much sheer sensual pleasure as when the top was open. In the States winter driving was so comfortable that I often made the mentioned cross country trips non-stop except for gas. But in very warm Florida weather, when during rain I was forced to close the top and roll up the windows, I found it very uncomfortable to say the least. I consider this lack of ventilation ducts a serious deficiency and it makes Porschering under these climatic conditions utter hell. Here the Zuffenhauseners have miserably failed. Even the low-priced VW-Karmann-Ghia has these air vents. Two, I think the Zuffenhausener responsible for designing the exhaust pipes through the rear fender posts must have done so under the influence of a Munchener beer jug. And 3rd and last criticism: The red reflectors above the rear fenders are ridiculously frail, vulnerable and an eye-sore on the otherwise well-streamlined body.

Arnold Krulle
Florida Region

PCA ORANGE COAST GOES ON A BINGE

"En vino est veritas." And the truth was brought out when fourteen Porsches finished the Rallye de Vino Bernardo on the 23rd of April. The fifteenth one was probably being driven by Diogenes whose lamp went out and so couldn't find his way. The "truth" was the superlative route laid out by Rallyemaster George Koteles to an ancient winery situated some 70 miles as the crow flies from the starting line, and 127 miles the way the Porsche flies.

The object of the rallye was to arrive at the Bernardo Winery near Escondido, California, on a schedule concocted by George. Once there, the object was to savor some of California's finest wines at the source. And savored it was! It is reliably reported that certain participants' camber became noticeably negative as a result.

The winner of the event was the team of Jerry and Linda Hopper who managed to pass through a surprise check point at precisely the moment they should have. Their award was a gallon jug of you know what.

After arriving at the finish line, the happy group was conducted on a tour of the establishment by the proprietor, who advised that the grape is no longer crushed by the bare feet of lovely virgins. This was followed by a session of sampling the wares of the house, with hors d'oeuvres of salami, cheese, and Italian bread.

Then came the picnic in a picturesque meadow at the vintner's gate, with a backdrop of blue skies and rolling hills abounding with the grape in its natural form. Thus came to a close a day enjoyed by one and all.

Oh, yes! Diogenes reported in about midnight with his version of why he wasn't at the finish line: He didn't lose his way—he was there in spirit.

Story and photos by
Bill Knoll
Orange Coast Region

Wanted

Porsche Spyder, any year, prefer car less motor and transmission that needs work but will accept anything if the price is right. Have cash, will travel. Irwin Victor, 118 Dogwood Dr., Newport News, Va.

Carrera shop manual for '57 engine No. P70787 with distributors off the cams. Also owners manual or any literature you have on Carreras. Jim Watson, Box 128, Chapel Hill, Tenn.

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RALLYE DE VINO BERNARDO

1. Rendezvous
2. George Koteles and Marv Garrison and paperwork
3. Pete Arola plans ahead. He got lost
4. Check point
5. Winery tour
6. Murray Brown, center, Jim Hush, left, trying to resist temptation
7.,8. Picnic area with vinyards in background
9. "Sold!" George Koteles making up the deficit by auctioning the surplus wine samples

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EDITORS: Ted Smith
Charles Beidler, Jr.

PORSCHE HEADLIGHTS

At almost any Porsche conclave which you wish to recall, I expect that you have either been involved in or overheard a conversation concerning headlights. Usually someone has just purchased a new pair of super duper optiques to replace his existing headlights or has installed pencil beams with which to supplement his present lights. Also, it is not too infrequent an occasion that one comes across some note in Pano concerning a "find" in good headlights. Although not often expressed outright, the implication is that Porsche headlights are inadequate for fast night driving. This may be true, but there are several things which can be done to greatly improve road illumination and wind up with a very respectable lighting system for all but very high speed driving.

Porsche uses S. A. E. standard sealed beam lights. These bulbs contain two filaments, one for city and the other for country driving, use an aluminized mirror reflector and prismatic lens cover to achieve accurate beam pattern. The high beam filament has a 6 volt, 7.5 ampere, 45 watt, 32,000 candlepower rating. Thus, a pair of thees lamps will provide approximately 64,000 candlepower and will so well illuminate the road as far as 1000 feet ahead as to afford safe seeing at all legal speeds. If you are dissatisfied with your lighting, the fault is probably not in the lights themselves, but for one or more of the following reasons.

IMPROPER ADJUSTMENT

The Porsche is slightly handicapped at the very outset by the closeness of its headlights to the road. As a result, any little hump or dip in the road ahead may obstruct or be overshot by the lights, resulting in poor illumination. The 356B has had its lights raised by a few inches in an attempt to improve this situation.

Night time seeing is often not a matter of intensity but of illumination. You may notice that there is just no light at all five hundred feet ahead of your car. The solution to this is, get your lights adjusted properly. A misalignment of only one degree of the bulb means a displacement of the beam of five feet at a distance of three hundred feet down the road! For accurate alignment, don't settle for the common rod-on-the-board arrangement, but try to find a shop with an electronic headlight alignment apparatus. This is considerably more accurate, costs a little more and is worth it. If you usually drive alone at night, sit in the driver's seat while the lights are being adjusted. If you usually have a passenger at night then have two people in the car during adjustment. This assures that the lights are properly adjusted for actual conditions. Fig. I illustrates illumination contours for properly adjusted lights under actual conditions. Light

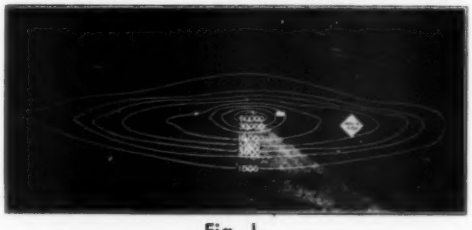


Fig. I

intensity is given in candlepower for each of the contours.

LOW VOLTAGE

In addition to poor adjustment, low voltage at the headlights is a main cause of poor illumination. In the formula,

$$I_x = \left(\frac{V_x}{V_o}\right)^k I_o$$

V_x is any voltage we choose and I_x is the candlepower at that voltage. V_o is the normal operating voltage of six volts and I_o is the normal light output of thirty two thousand candlepower. The constant, k, has a value of 3.4. From this formula, we can calculate the drop off of light intensity with a decreasing voltage and graph the result, as shown in Fig. II.

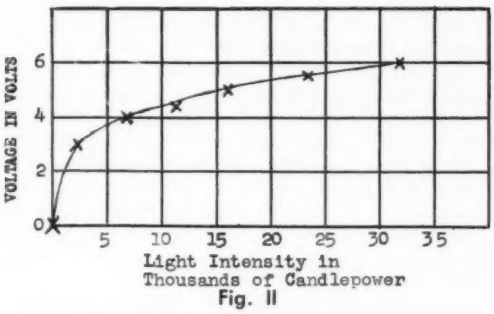


Fig. II

As can be seen, the relationship is not linear, and with a decrease of only one volt we have a light intensity decrease of almost fifty percent.

In the Porsche, unfortunately, it is easy to have a drop of nearly a volt. Current for the headlights comes from the battery to the fuseblock, then to the headlight switch, down to the dimmer switch, back to the fuseblock through separate fuses for each filament and finally out to the headlights. Thus a mere two tenths of a volt drop at each of these points and you have lost a volt in distribution.

Looking at this matter in another way, from Ohm's law we can calculate the resistance of the high beam filament.

$E=IR$ where I is current
where E is voltage
$6=7.5R$ where R is resistance
$R=0.8$ ohms per lamp.

To make matters worse, the filaments of each light are in parallel and the resultant resistance is actually 0.4 ohms. Therefore, the total resistance of the path from the battery to the lights must be considerably less than this figure or a significant voltage drop will result. The moral to this story is, check the voltage at your headlight terminals and compare it with the reading you get at the battery terminal.

If the differences is greater than three tenths of a volt, your light intensity has dropped by almost twenty percent and the loss may be considered excessive. There are two approaches to correcting the problem of low voltage. First, you can try tightening up all terminals in the path from battery to bulb. It may be that the trouble is merely a loose connection and can be easily cured. However, if you have an older model, the voltage drop will probably be upwards of a volt and only a thorough cleaning of all joints and connections will suffice.

The alternate solution is to install a headlight relay. For this job you will need two double pole single throw, normally open relays with six volt coils. A schematic of the conversion is shown below in Fig. III.

Each relay contact should be rated for at least eight amps, the lines going from the relays to the lights should be fused individually and it would be a good idea to mount the relays in a box, to minimize fouling of the contacts. Mount the relay system as near to the battery as possible and use at least number twelve wire or heavier from the battery to the relay contacts. The lines coming from the fuse block to the headlights will have to be cut, after tracing out which wire goes to what filament. Then use one pair of these wires for switching the relays and tape up the ends of the other pair. Splice in heavy wire from the relay contacts to the old wires which go out to the headlights, tape everything securely and you're done. For best results, either solder all connections with rosin core solder or use a good quality crimp-type solderless connector. This is not a "snap" job, nor is it terribly difficult. Figure on four hour's work after you have assembled all of the necessary parts.

OLD AGE

In spite of advertising claims to the contrary, the light output of your sealed beams does go down

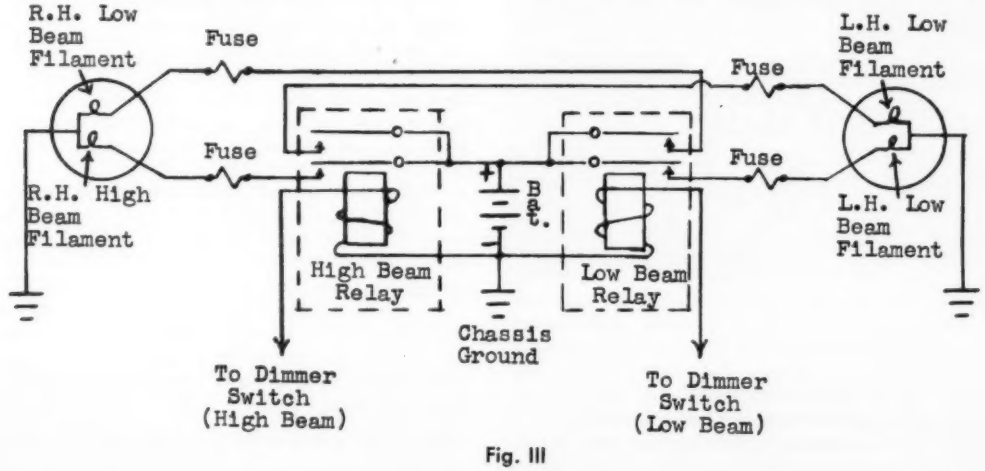


Fig. III

with age. The filaments slowly evaporate with the intense heat, around 4,500 degrees F., at which they operate. The bulb is filled with argon or nitrogen gas to retard this evaporation which causes the diameter of the filament wire to decrease with an accompanying increase in the resistance of the filament. Thus, less current, less power and lower light output. A graph of light output in lumens versus bulb life is shown in Fig. IV.

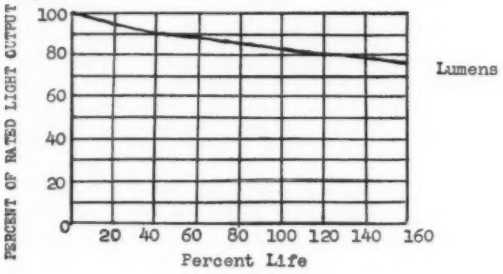


Fig. IV.

The lumen is the unit of luminous flux radiated and is equal to the amount of luminous flux received on an area of one square foot at a distance of one foot from a point light source of one candlepower. One lumen per square foot is also called a foot candle. Thus the light output can drop almost twenty five percent with extreme age. Design life of your headlamps is around one thousand hours, so if your lights have operated this long or longer, you'll benefit from buying a new set.

Finally, for those who demand really excellent high speed lighting, there is nothing to do other than get a set of good lights and mount them up on top of the fenders. This may sound strange, but regardless of the power of that gang of pencil beams you put on your bumper, your vertical illumination isn't going to be improved one bit. That is to say, the little bump in the road that may block off your light normally will do just as good a job on the light from your flame throwers.

Terry O. Herndon
Northeast Region

TACHOMETER CABLE

A quick fix for a broken tachometer cable is to have one fabricated locally. It is a simple matter to remove both parts of the broken cable by disconnecting it at the back of the tachometer and at the engine. The best source of the new cable is a shop that does ignition and speedometer repair. Give them both pieces of the broken cable and ask to have one made of the same size as the original. This can normally be done in about five minutes. Cost is approximately two dollars—much less than the cost of the original equipment replacement. Make sure YOU measure the new cable, paying particular attention to the location of the small ferrule which fits on the tach end of the cable. This ferrule is crimped in place and is difficult to move. The ferrule must be located exactly as on the old cable, otherwise the cable will not fit properly. Be sure to grease the new cable before installing. The Porsche replacement cable comes complete with outside housing and is considerably more difficult to install.

Major Frank Beckett
Kentucky Region

CABLES and THROWOUT BEARINGS

It seems that there has been a rash of broken clutch cables—again! 1960 cars as well as older cars have been afflicted. In 1958 or thereabouts, the clutch end of the cable was increased in size to eliminate breakage at this point. In 1959 the clutch end was changed again to the present clevis and pin arrangement. Therefore, the clutch end is quite reliable, but the cable breaks at the pedal now.

The cables seem to be breaking just aft of the pedal fixture which the cable passes through. The broken ends seem to indicate poor quality control of the metal. It is also possible that the fixture which the cable passes through is not rotating or swiveling as freely as it should, thereby putting a shear as well as tension load on the cable end, causing it to break. An arrangement at this end similar to the rear end would probably help a lot.

Installation of the type 692 Carrera clutch does not help the cable any. Best advice at this time is to carry a spare and know how to put it in if you are on the road a lot. The bad thing is that this trouble gives no warning and can happen at any time.

It seems I am in a rut. More clutch problems. Recently we had a very strange case of clutch trouble. The last week in February, a customer with a 1960 car (with approximately 15,000 miles) claimed that his clutch pedal was sticking and not allowing him to push it all the way to the pedal stop. This was not evident at the time we checked the clutch operation. He was advised to make an appointment to have the engine removed and the clutch checked.

In due course the car was presented for "repairs as necessary to the clutch." I did remember the car but not the exact complaint. The engine was duly removed, clutch removed and examined. Everything appeared to be perfectly normal. The disc and pressure plate were cleaned up and examined more closely. Some 1960 cars had rust on the disc and mainshaft splines, preventing proper release of the disc. This was not the case here, however.

Finally, somewhat from force of habit, I pushed on the release lever on the transmission housing

to check that the throw out shaft was free. It takes some force to overcome the clutch return spring, but this shaft seemed to be very stiff. Finally it moved rather jerkily. The throw out bearing was removed. As most of you know, in 1960 the throw out bearing was changed to the guided type which moves in a true fore and aft motion, and not in an arc as the pre-1960 models. Upon examination, the inner surface of the bearing which slides on the sleeve or guide bolted over the mainshaft, was deeply eroded and worn. No doubt the bearing was cocking on the sleeve and preventing full release of the clutch at times. The guide sleeve was also removed. It showed wear on the uppermost area only. It was smoothed up with emery paper and replaced. On replacing this sleeve, it was rotated one hold to the left, placing the worn area to the side and presenting an unworn surface on the upper portion. This sleeve is mounted on 3 equidistant studs so there are 3 positions it can be placed in. A new throw out bearing was fitted, the guide sleeve and bearing being lubricated upon installation.

The exact cause of this trouble is not known unless there was no lubricant placed on the guiding sleeve at time of assembly. This is the only case of this trouble we have seen to date, and we hope the last.

Vern Racek
Rocky Mountain Region

HEADLIGHT LENSES

Many owners of the pre-1958 speedster have the "birdcage" screens over the headlamps. I found these to lead to unsightly, peeling paint around the headlight and water in the spare tire well after rains. The following is a description of the procedure to install glass lenses in place of the screens—or to replace broken glass lenses:

Parts needed: Two headlight lenses VW Part No. 111941115B with two rubber lens gaskets (total cost under $4.00). With the Hella assembly I found the chromed headlight rims already on the car perfectly usable. Tools needed: One large bitted screw driver.

1. Remove the screen.

2. Use the screwdriver to loosen and remove large screw at the bottom of the headlight rim.

3. Lift out the headlight assembly and disconnect the electrical contact.

4. Before removing the aiming screws, mark their position with colored paint (e.g., fingernail polish). Then remove them.

5. Press out the retaining clips and remove the chrome headlight rim.

6. Remove the rubber gasket used for the "birdcage" screen.

7. Place rubber gasket around the glass lens, clean it on the inside and put it in place of the gasket removed in step six.

8. Place the headlight rim over the lens and replace the retaining clips.

9. To keep the same aiming adjustment, replace those screws removed in step four to the paint mark.

10. Replace the headlight unit in the car. I found it necessary to completely disassemble the headlight assembly and to refinish it. This was done after step six and resulted in a marked improvement in the appearance of our speedster.

J. R. Newbrough
Potomac Region

NO MORE "SQUARE DRUMS"

I had my first and last "square" brake drums on my 1955 1500N Cabriolet. My theory is that this condition is brought on by setting the hand brake too tight, especially if the brakes are hot. I am now on my third Porsche, a 1960 Super with over 20,000 miles and have no problems with out-of-round drums. The same held true for my 1957 Normal, with 37,000 miles. With both of the latter cars I took particular care to set the hand brake just enough to keep it from rolling and no more. It is a temptation for those who are used to the inadequate hand brakes of domestic lumps to pull with all their might, thus putting excessive stresses on the aluminum drum, especially during and after the cooling period when the metal parts shrink in size.

Bill Knoll
Orange Coast Region

PCA TENT AT VIR

PCA's CAROLINA REGION hosted fellow members at the recent SCCA Nationals held at the Danville, Va., track. Using the VW Combi-Camper of Harvey Chaney, the gang served refreshments and had visitors sign the guest book. A delightful atmosphere prevailed and a big THANKS go out to Harvey Chaney, Allen Gaddy, Roy Smith, Dave Rice and John Jones.

NEW TYPE [redacted] OF

If you should be checkpointing a night rally and should see a car approaching with its headlights dimming in a rhythmical rate as blink, blink, blinkety, blink, blink, don't give it a second thought. It is just some car using a Wagner-Stattel Computer with a rate of 28 mph set in. Every one-half rally second the computer draws a pulse of current of about 10 amperes. The dimming headlights are a slight exaggeration, but the computer does draw pulses of 10 amperes and its lights do dim.

The computer which will be described is the result of a year's development by Ray Stattel and myself. The features of the computer are as follows:

1. It is digital in operation (accuracy ½ second).

2. The average speed may be set in directly in mph to the nearest .0.01 miles per hour.

3. The oldometer correction factor may be entered directly with four figure accuracy over the range 1.1999 to 0.2000.

4. The readout of the computer is a rotating watch which is driven electrically in ½ second steps. It may be run either forward, or, for off-course errors, backward. In the forward mode, the watch runs counterclockwise and the position of the second hand in reference to a fixed mark indicates early or late.

5. The input to the computer is electrical. A vacuum enclosed contact is closed by a rotating magnet geared to the odometer cable.

HOW TO COUNT "TURTLESTYLE" ....

To explain the method of computation, suppose you are a turtle in a turtle rally and you have two basic gaits—large and small. In the small gait, the left front foot (odo foot) travels one foot per step and in the large gait, the left front foot travels two feet per step. To further simplify the problem, let us imagine that the left front foot is dipped in white paint and leaves a mark PCA at each step. Thus, you the turtle, will leave a mark on the ground every foot or every two feet you travel. We shall suppose that being a turtle, time comes to you in one minute increments. Now, if the rally calls for an average speed of one foot per minute, you have no trouble. You will employ your small gait and leave a PCA mark every foot and you will take a step every minute to stay on time. Even if you don't take a step every minute, you will still know what time should be because you have left a mark on the road for every minute. If the rally calls for an average speed of two feet per minute, you will again have no problem.

Switching to the large gait of two feet per step, you will take one step per minute and leave a PCA mark on the ground every two feet. The marks on the ground are merely an indication of rally time for the particular rate and the total number of marks on the ground up to a certain point indicates the total elapsed rally time to that point. All this is just an expression of the relation, *D equals RT*. You are doing fine in the rally travelling at either one or two feet per minute, but now comes the instruction: "Travel at 1.7 feet per minute." If you are a smart turtle, you will solve this problem by travelling some of the steps at the large gait and some of the steps at the small gait. If for every ten steps, three were small ones and seven were large ones, the step sequence might be 2,1,2,2,2,1,2,2,1,2. At the end of ten steps the distance travelled would be seventeen feet. Seventeen feet in ten minutes is an average speed of 1.7 feet per minute. If you had to travel 1.76 feet per minute, you would again mix big steps with small ones except that you would do your mixing in batches of ten steps so that four times you would travel seventeen feet in ten steps and six times you would travel eighteen feet in ten steps; this is 176 feet in 100 steps.

HOW THE COMPUTER COUNTS

Our computer does not have a built-in, two-gaited turtle but it operates on a similar principle. The basic rates that the computer handles are 10, 20, 30, 40, 50, and 60 mph. It accomplishes the interpolation of rates by being able to add to these rates one unit; that is, 10 mph. The augmented rates are then 20, 30, 40, 50, 60, or 70 mph.

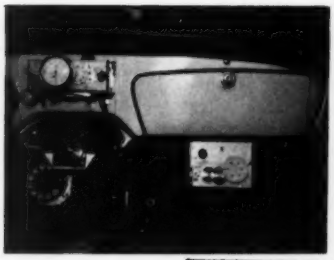
The output of the computer is ½ second pulses.

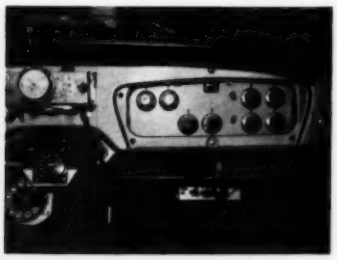
RALLY COMPUTOR

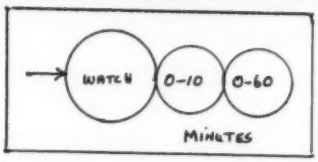
At 10 mph this is 720 pulses per mile. This is the minimum input rate to the computer. At a high rate of speed there may be as many as 20 pulses per second. In order to handle the fairly high input rate and to avoid the life problem of mechanical parts, the input is handled by a transistorized counter. This counter divides the input pulses by any number from 1 to 7. It puts out one pulse for every input pulse or one output for every other input pulse up to one output for every seventh input pulse. The divisor is determined by the setting of a switch on the front panel which represents 10 to 60 mph. The count may be increased by one by closing a second switch which is not directly on the front panel but which is closed by the computer itself at the proper times.

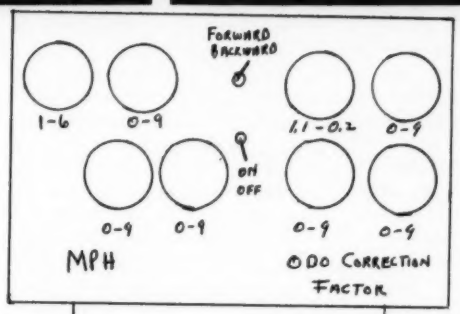
The counter consists of three flip-flops which count on a binary basis. The knob on the front panel controls each of the flip-flops so that, normally, on reaching the count of seven, the flip-flops are reset back to 6, 5, 4, 3, 2, or 1. This gives counts ranging from 1 to 6. In order to increase the count by 1, we delay the reset point by 1, so that the reset point is 8 instead of 7. The electrical output of the transistor counter is another vacuum enclosed switch operated this time by a solenoid and a transistor.

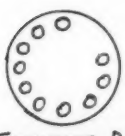
The closing of the output switch causes a stepping motor to advance 1 step. The indexing of these steps is determined by a twelve-position wafer switch to which 10 stop positions are wired. The stepping motor itself is a British



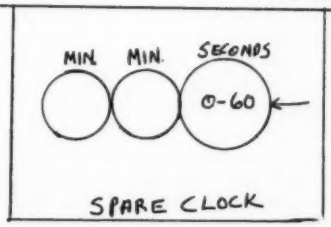








TELEPHONE DIAL
(TO ADD SECONDS)



hobby motor known as a "Mighty Midget" modified by replacing the metal brushes of 100 hours life with carbon brushes. In order to make this motor index properly, four moré transistors and two more vacuum enclosed switches are employed. Two more wafer switches are also turned at the same time. The function of the first of these switches is to control the second digit of the required rate.

It will be recalled that the count can be increased by one if a switch is closed. If we wish to set in the rate 36 mph, we set the first dial of the computer to 30 so that the counter has a count rate of 3. The second dial of the computer is set at 6 so that on 6 of the 10 possible stopping positions of the stepping motor the circuit which increases the count by one is closed. In this way, we can interpolate any speed to the nearest 1 mph. To carry the interpolation to the nearest 0.1 mph, a second set of suitably modified 10-position switches are gear driven 10-1 from the first set and positioned to close on one contact or another. When the first switch is in the tenth position, another front panel switch controls the number of times out of ten that the tenth contact of the previous switch is in the circuit. This process is repeated once more to obtain mph to the nearest 0.01 mph.

THE ODOMETER CORRECTION FACTOR

The normal output of the computer occurs at the reset of the counters which is also in synchronism with the stepping motor of the computer. Each step or reset pulse represents ½ second of normal time. The stepping motor of the computer with its decimally driven shafts could well be employed as an indicator of rally time if one did not desire also to introduce the odometer correction factor into the output. In order to obtain the correction factor, the normal output of the computer is fed thrugh the second set of gear driven wafer switches. The tenth contact of each switch as before is wired to the arm of the next switch. To set in a correction factor of 0.9800, for example, nine of the contacts of the first switch are energized by the setting of a dial on the front panel, and the tenth contact is energized 8 times out of 10 by energizing 8 contacts of the next wafer switch. It will be recalled that the stepping motor of the computer is indexed by wiring to 10 contacts of a 12-position switch. It is thereby possible to obtain as an output due to the rotation of this shaft, 12 output pulses for every 10 steps of the stepping motor. In this way we can multiply the number of output pulses by factors up to 1.1999. When an odometer correction factor other than one is employed, an extra inaccuracy of about ½ second is introduced because the correction circuit operates on the output of the computer rather than its input. Ever so often a ½ second will be left out, indicating that the clock was previously about ½ second fast, or ever so often with a correction factor of over one, an extra ½ half second will be put into the output, indicating that the clock was previously ½ second slow.

At one time, we used a solenoid controlled Kodak Timer as an indication of the time output of the computer. We have not been able to keep our Timer running reliably, however. Now we employ a "Mighty Midget" motor in the same stepping motor configuration as we employ in the computer. For an extra measure of reliability and for convenience, we have two such clocks. One of which carries a stop watch to read time error. Reverse is accomplished by reversing the polarity of d-c applied to the motors.

T. C. Gordon Wagner
Potomac Region

FOR SALE

One Italian TROMBE "Super Princess" air horn. Six volt, three horn, variable type. Either blows chime blast or variable notes. Never used. Fifty dollars PP. Stan Agnew, Box 1635, Santa Fe, New Mexico.

SPORTSMAN'S DELIGHT! 5x7-foot Camp Trailer. Sleeps 4. Partially outfitted—can be had with or without 8x10-ft. tent. Designed for towing with Porsche; has 48" wheel track; 6.00x9 tires. Has 4-in. steel frame. ½" marine plywood with stainless steel trim. Full ICC running lights. MAKE REASONABLE OFFER. Webber H. Glidden, 295 Highland Street, Leonia, N. J. Phone WI. 4-8160.

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PCA PERSONALITY

Burt Propp

Photographer, artist, CPA, raconteur, gourmet, AND Porsche owner—all these together spell BURT PROPP, editor of the Newsletter of the Golden Gate Region.

Burt started with a 1955 silver normal, with a stripe. He followed in 1958 with one much more to his liking, a 1600N speedster. With it he was very rough competition in a gymkhana or an autocross. Just before the VI Parade this year, he will be picking up a '61 super convertible in Florida.

First active in the Porsche Owners Club of California, Burt was the first and only editor of the Northern California group's bulletin. Coming to the PCA as the Golden Gate Region was chartered a year ago, he continued as its first and only Newsletter editor. His 5-6 page monthly effort has set a standard hard to match.

On region events, members never know when his unobtrusive minicamera will catch them in interesting or embarassing situations, or when their private asides will somehow appear in Burt's famous "Nuts and Bolts" column. He also slips in cartoons that he has drawn.

Burt and Joan are not very large. Their speedster always seemed to be driving itself until, upon closer inspection, two hidden heads would appear. To offset this, the pair has assembled the strangest collection of headgear-for-Porsche that has ever been seen. Currently Joan appears in king-sized straws, with everything on them but the under-water native weavers. Burt matches her with straw, leather, felt or goatskin caps or hats, depending on his mood.

Wherever PCAers encounter Burt Propp, they will quickly learn that he is more fun than a boatload of Porsches!

QUESTION

In servicing the new 356B (1961), how many places are metric Allen wrenches needed? Answer next month.

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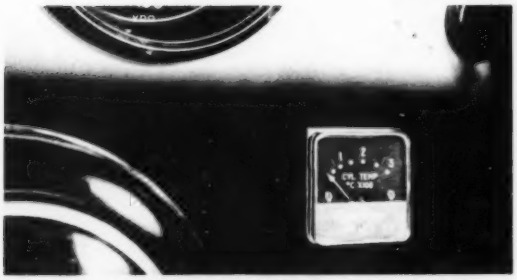
with the EMPI CYLINDER HEAD TEMPERATURE GAUGE



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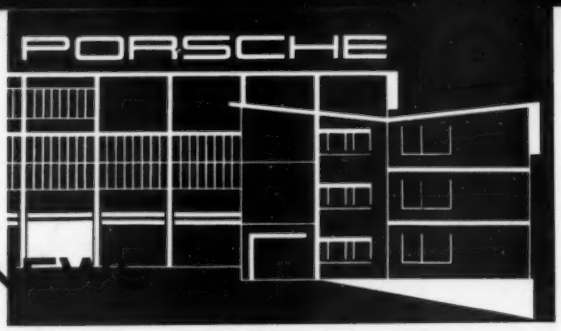
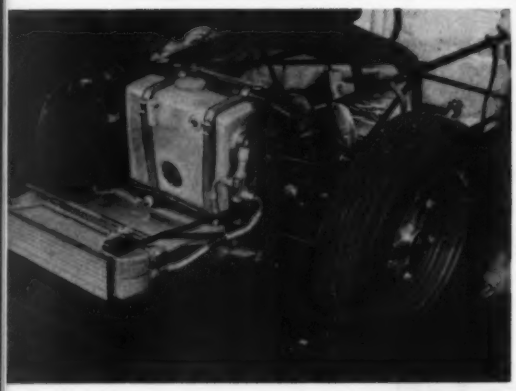


FACTORY N

Porsche Takes to FUEL-INJECTION!

The new Porsche 4-cylinder Racing Engine with Fuel Injection. No Technical Data has as yet been released, and you can't Special-Order this for your 1600 Normal!



This view of the new Formula I shows the Front Suspension and Oil Cooler.

Hans Hermann takes the Formula I round the Hockenheimring in a series of tests. No, that's not a radio antenna! The stick mounts a ram-jet device for measuring the Air-pressure inside the engine compartment.

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